ABSTRACT

An apparatus verifies the correctness of a behavioral model of a microcode machine, where the microcode machine is operable in a native state and an emulated state. The apparatus includes means for producing the native state, means for producing the emulated state, and means for comparing the native state and the emulated state. Corresponding to the apparatus, a method verifies the correctness of a processor behavioral model, where the processor operates in a native mode state and an emulated mode state. The method includes determining if a macroinstruction to be executed is a native instruction, and, if the macroinstruction is a native instruction, executing the native instruction, the execution producing the native mode state of the processor. The method further includes, if the macroinstruction is not a native instruction, fetching the macroinstruction, providing microinstructions corresponding to the macroinstruction, and executing the microinstructions, the execution producing the native mode state of the processor. Finally, the method includes executing the macroinstruction, the execution producing an emulated state of the processor, and comparing the native mode state the of the processor with the emulated state of the processor.